

EXHIBIT

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CLEANING AND STERILIZING APPARATUS FOR BARBERING TOOLS

Filed Nov. 30, 1967

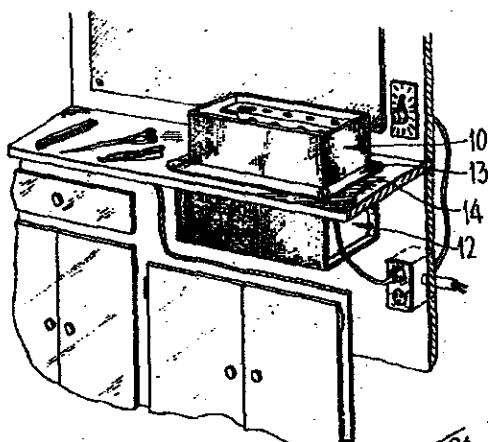


Fig. 1

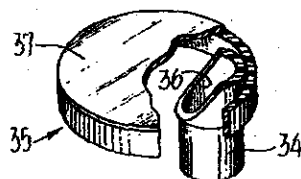
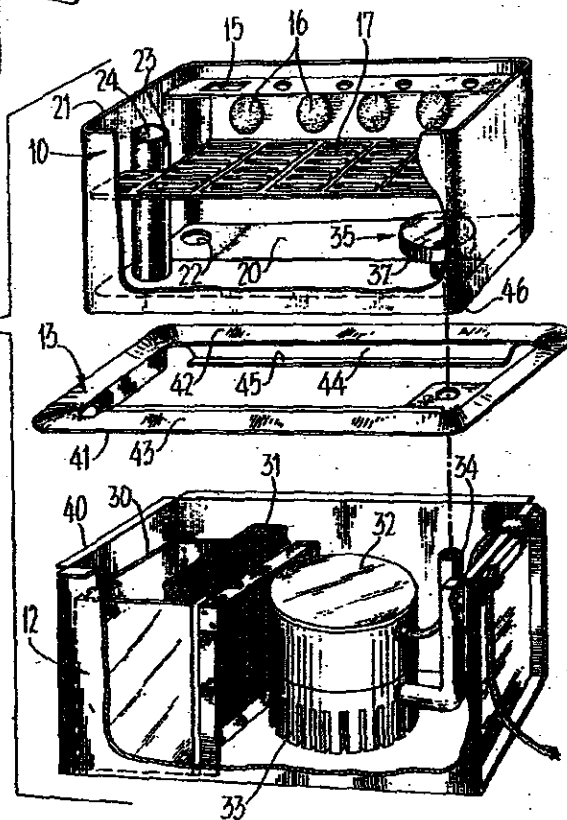


Fig. 3

Fig. 2



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1

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CLEANING AND STERILIZING APPARATUS FOR BARBERING TOOLS

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2 Claims

ABSTRACT OF THE DISCLOSURE

An apparatus for cleaning and sterilizing barbering tools and the like wherein a sterilizing fluid is circulated over the tools to remove the dirt, oil, and hair. The dirt, oil, and hair are washed away by the circulating cleaning fluid and collected and retained in a filter tank while the tools drain and dry in a sterile condition.

BACKGROUND OF THE INVENTION

The present invention relates to cleaning and sterilizing apparatus, and more particularly to an apparatus designed to clean the tools used in a barber shop. The tools used in a barber shop accumulate loose hair, hair oil, and other foreign matter while cutting the customer's hair. The loose hair, hair oil, and foreign matter must be removed before the next customer's hair is cut, and the tools sterilized to prevent possible transfer of skin disorders from one customer to another. Other tools used in a barber shop also accumulate foreign matter that must be removed prior to using the tools on a new customer.

In the past, and in many shops, the tools have been cleaned by physically removing the dirt and loose hair by wiping the tools with a towel or brushing off the tools. After the tools were cleaned they were placed in a cabinet to sterilize them by means of ultraviolet light or other means such as immersion in a sterilizing solution.

The above procedures involve considerable manual labor and do not produce the best results. For example, if the tools are covered with hair oil, it will not be removed by wiping or brushing. The tools of course could be washed to remove the oil, but this would result in a considerable amount of time on the part of the barber to effect the cleaning, and still necessitate a subsequent sterilizing operation. Also, placing of tools in a sterile solution does not assist in removal of foreign objects, and even with such a solution, the tools are not rendered bacteria static, since bacteria will remain on the hairs, etc., and subject the customer to possible contamination.

BRIEF DESCRIPTION OF THE INVENTION

The present invention solves all of the above problems by providing a cleaning apparatus that removes the loose hair, hair oil, and other dirt from barbering tools. At the same time that the tools are cleaned they are sterilized. The invention utilizes a cleaning tank having racks for mounting or holding the tools during the cleaning operation. The cleaning tank is mounted above a second storage tank that contains a filter for filtering, a cleaning and sterilizing fluid, and a pump for circulating the fluid. The pump circulates the fluid to the cleaning tank where it flushes and washes the hair, hair oil, and other dirt from the tools. The fluid is circulated in a manner to wash all of such foreign matter from the cleaning tank into a filter tank. This insures that the hair and dirt once removed from the tools will not resettle on the tools when the circulation of the cleaning fluid is stopped. The filter tank can be periodically removed to clean the filter and tank.

2

BRIEF DESCRIPTION OF THE DRAWINGS

The above advantages of this invention and additional features will be more easily understood from the following detailed description of a preferred embodiment when taken in conjunction with the attached drawings in which:

FIGURE 1 is a perspective view of a cleaning apparatus constructed according to this invention and installed in a counter;

FIGURE 2 is an exploded perspective view of the cleaning apparatus shown in FIGURE 1; and

FIGURE 3 is a perspective view of the flow control means used for washing the hair and dirt from the cleaning tank.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIGURES 1 and 2 there is shown a cleaning and sterilizing apparatus constructed according to this invention. As shown, the cleaning apparatus utilizes a first or cleaning tank 10 and a storage tank 12. The storage tank is adapted to be positioned within an opening in a counter top 14 with a trim strip 13 providing a marginal covering around the opening. The cleaning and storage tanks may be fabricated from sheet metal and painted, or they can be fabricated from stainless steel, plastic or other non-corrosive material.

The cleaning tank is provided with a rack 15 and a series of magnets 16 for holding the tools while they are cleaned. A grid 17 is mounted in the tank for holding larger tools and is mounted approximately midway between the top and bottom of the tank. The cleaning tank is provided with a drain 22 at one end for draining the hair and dirt into the filter tank as explained below. The cleaning tank is provided with a sloping bottom 20 that slopes towards the end 21 of the cleaning tank containing the drain 22. The sloping bottom assists in draining the hair and dirt into the filter tank. An overflow pipe 23 is also mounted adjacent the end 21 of the cleaning tank. The height of the top 24 of the overflow pipe determines the level of the cleaning and sterilizing fluid in the cleaning tank.

The second or storage tank 12 contains a separate filter tank 30 having a filter 31 mounted therein. A submersible circulating pump 32 is also mounted in the storage tank. The circulating pump is provided with a suction inlet 33 at its bottom and a discharge connected to a discharge outlet 34 at its side.

The discharge outlet of the circulating pump is coupled to a flow control means 35. The flow control means is formed by the end of the discharge outlet that terminates in a beveled edge 36 and a mushroom cap 37 positioned over the open end of the discharge outlet. The flow control means serves the dual purpose of preventing splashing of the fluid and of controlling the circulation of the cleaning fluid to insure that the hair and dirt are washed from the cleaning tank.

The upper end of the walls of the storage tank terminate in outwardly projecting supporting flanges 40 which overlie the counter top around the opening therein, and which in turn are covered by the trim strip 13. The two sides 42 and 43 of the trim strip member are each provided with downwardly extending portions 44 that terminate in inwardly extending flanges 45. The lower edge 46 of the cleaning tank is removably supported on these flanges. When the cleaning tank is in position the upper end 36 of the discharge outlet of the pump extends into the mushroom cap 37 as shown.

OPERATION

The cleaning apparatus is assembled as shown in FIGURE 1 and the storage tank filled with a suitable cleaning and sterilizing fluid. The fluid may be a liquid containing

3,500,840

3

a cleansing agent such as a detergent, and a sterilizing agent, and preferably a lubricant. The tools to be cleaned are placed in the cleaning tank either by positioning them in the rack 15 or laying them on the grid 17. The circulating pump is then started and the fluid circulated. It will be necessary to circulate the fluid for a time before the cleaning tank is filled. The time required will depend on the size of the drain 22 in relation to the capacity of the pump. After the tank is filled, the continued circulation of the fluid will wash the hair, waxes, hair oil, and other dirt from the tools. Normally, a few minutes of circulation is sufficient to thoroughly clean sterilize and lubricate the tools.

The hair and dirt removed from the tools will fall to the bottom of the cleaning tank. The flow control means 35 is designed to cause the cleaning fluid to flow along the bottom of the cleaning tank towards the drain 22. The flow of the cleaning fluid in combination with the sloping bottom of the cleaning tank will wash the hair and dirt down the drain into the filter tank.

The hair oil will normally be lighter than the cleaning fluid and thus will float on the surface of the fluid. The overflow 23 will tend to skim off the top layer of the cleaning fluid and thus remove the oil from the surface of the fluid. The oil, hair, and dirt will all be retained by the filter 31 located in the filter tank. After a period of approximately five minutes, the pump is stopped, and the fluid will all drain out through the drain 22, and the tools will tend to drip dry and remain in a sterile condition.

After the fluid has drained from the cleaning tank, the cleaning tank can be removed from the top of the storage tank. The filter tank and filter can then be removed from the storage tank and cleaned. After the filter and filter tank are cleaned they can be replaced and the cleaning tank reinstalled. The apparatus can then be placed in operation as explained above.

What is claimed is:

1. An apparatus for cleaning and sterilizing tools comprising: a cleaning tank having means for holding said tools, said cleaning tank having a bottom wall provided with a drain outlet, a storage tank positioned below said

4

cleaning tank, fluid circulating means for circulating a cleaning and sterilizing fluid from said storage tank to said cleaning tank, an overflow pipe interconnecting said tanks to limit the height of fluid in said cleaning tank, said circulating means having a pumping capacity in excess of the drain capacity whereby fluid may be pumped into said cleaning tank up to the top of said overflow pipe, filter means in said storage tank to separate foreign matter from said cleaning fluid, and flow control means in said cleaning tank adjacent the bottom wall thereof for receiving fluid from said circulating means and directing the same along the bottom of the cleaning tank towards said drain outlet, said flow control means including a discharge outlet of said fluid circulating means terminating in a bevelled end, and a mushroom shaped cap overlying said bevelled end, said bottom wall of said cleaning tank sloping downwardly from said flow control means towards said drain outlet.

2. Apparatus as set forth in claim 1 in which said storage tank is provided with outwardly directed flange portions adjacent the upper portion thereof for supporting the tank within a counter opening, and inwardly directed flange means adjacent said flange portions for supporting the peripheral portions of the bottom wall of said cleaning tank.

References Cited

UNITED STATES PATENTS

1,524,084	1/1925	Cook	
1,979,504	11/1934	Tafel	134—154 XR
2,324,234	7/1943	Peters	239—193
3,267,944	8/1966	Meeker et al.	134—183 XR
3,338,251	8/1967	Nobili	134—198 XR
3,365,267	1/1968	Mc Kiney et al.	21—87

FOREIGN PATENTS

669,649 1/1939 Germany.

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21—87, 91, 103, 105; 134—182, 191